

FIG. 1

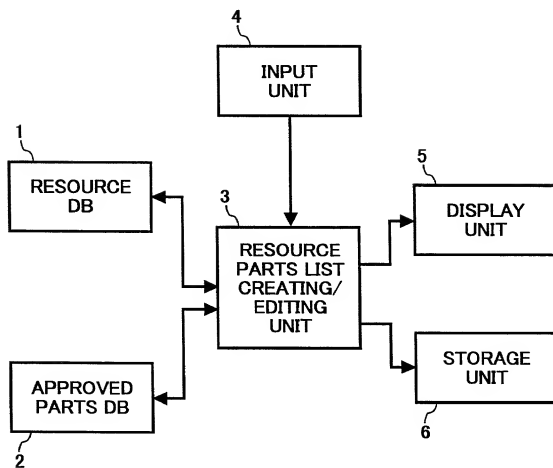


FIG. 2

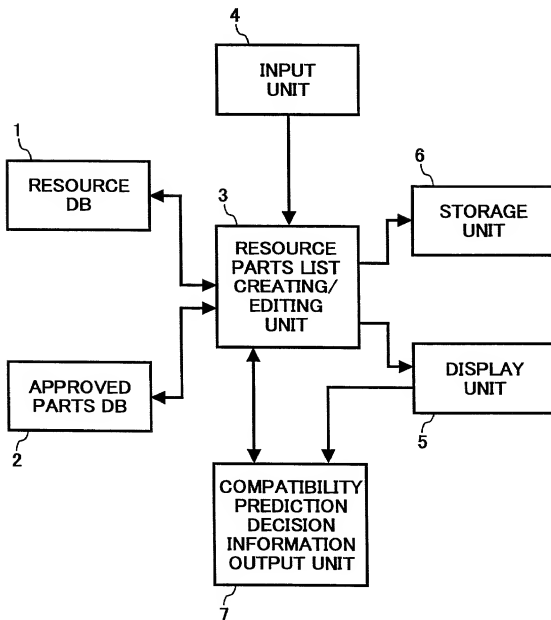


FIG. 3A

	FUNCTION LEVEL 1	FUNCTION LEVEL 2	FUNCTION LEVEL 3	
1	READ	IMAGE SENSOR		SENSING
2	READ	ANALOGUE SIGNAL PROCESSING	DIRTY BACKGROUND REMOVAL	ELECTRICAL

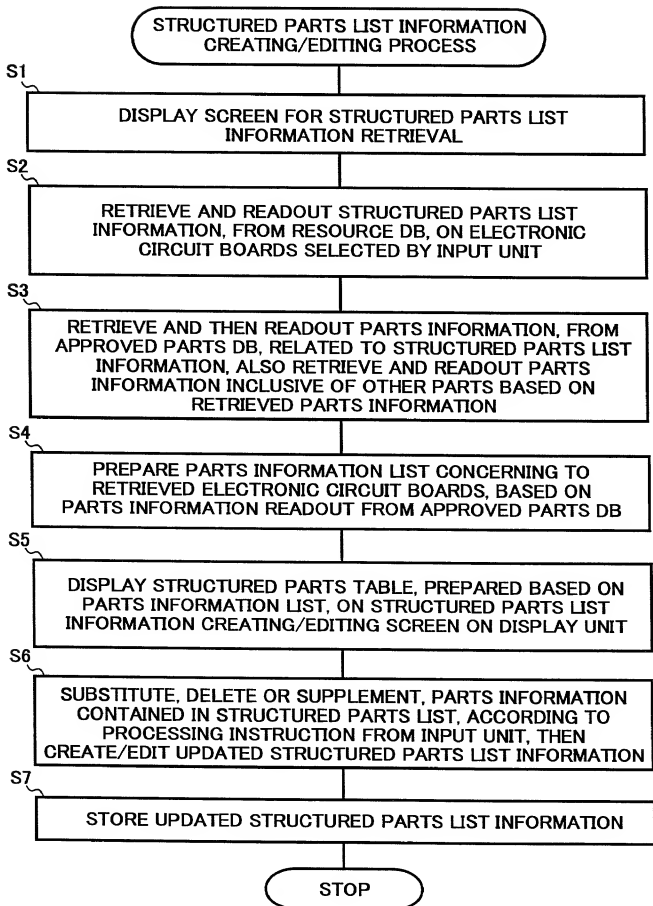
FIG. 3B

	FUNCTIONAL DEVICE	MAKER	MAKER'S MODEL NUMBER	MAKER'S PART NUMBER	UNIT PRICE	QUANTITY
1	CCD LINEAR IMAGE SENSOR	A CO.	XXXXXX	XXXXXX	XXXX	1
2	CUSTOM IC	B CO.	XXXXXX	XXXXXX	XXXX	1

FIG. 3C

	PCB	USER'S PART NUMBER	UNIT
1	PRINTED BOARD: XX TYPE	XXXXXX	SCANNER
2	PRINTED BOARD: XX TYPE	XXXXXX	SCANNER

FIG. 4



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FIG. 6

PART CLASS		PCB		CHARACTERISTICS	
PCB NAME		...		NAME	UNIT
PROD LOCATION		...		VALUE	
PCB PART NUMBER		...			
PART NAME		...			
MODEL STATUS		...			

TARGET PRICE (DESIRED)		CURRENT PRICE		PRICE WHEN MASS-PRODUCED	
...		NET PRICE		NET COST	
...		CURRENT PRICE		ESTIMATED PRICE WHEN MASS-PRODUCED	

STATUS	PART NUMBER	PART CLASS	MAKER'S MODEL NO.	MAKER	ALTERATION	QUANTITY	CURRENT PRICE
RECOMMENDED	01234	CONNECTOR TO/FROM BOARD	151525-3	A ELECTRONICS	...	...	...
APPROVED	50011	CONNECTOR SIGNAL SYSTEM	153123-7	A ELECTRONICS	...	...	...
APPROVED	51907	CONNECTOR SIGNAL SYSTEM	153123-8	A ELECTRONICS	...	...	...
APPROVED	08812	TRANSISTOR	AB114	B ELECTRIC	...	...	...
APPROVED	08643	TRANSISTOR	AB333	B ELECTRIC	...	...	...
APPROVED	04438	RESISTOR ARRAY	3-GEQ-1	C INDUSTRY	...	...	...
...

FIG. 7

PART CLASS		PCB	
PCB NAME		...	
PROD LOCATION		...	
PCB PART NUMBER		...	
PART NAME		...	
MODEL STATUS		...	

CHARACTERISTICS		
NAME	VALUE	UNIT

CURRENT PRICE		PRICE WHEN MASS-PRODUCED	
TARGET PRICE (DESIRED)	NET PRICE	...	NET COST
TARGET PRICE (MANDATORY)	CURRENT PRICE	...	ESTIMATED PRICE WHEN MASS-PRODUCED
...
...

STATUS	PART NUMBER	PART CLASS	MAKER'S MODEL NO.	MAKER	ALTERATION	QUANTITY	CURRENT PRICE
RECOMMENDED	01234	CONNECTOR TO/FROM BOARD	15125-3	A ELECTRONICS	...	...	...
APPROVED	50011	CONNECTOR SIGNAL SYSTEM	153123-7	A ELECTRONICS	...	...	...
APPROVED	51907	CONNECTOR SIGNAL SYSTEM	153123-8	A ELECTRONICS	...	...	...
RECOMMENDED	70458	TRANSISTOR	M11LL33	M FACTORY	...	...	...
APPROVED	08643	TRANSISTOR	AB333	B ELECTRIC	...	...	...
APPROVED	04438	RESISTOR ARRAY	3-GEQ-1	C INDUSTRY	...	...	...
RECOMMENDED	202201	MEMORY DRAM	M72-125	N PART INDUSTRY	...	...	...
...

FIG. 8

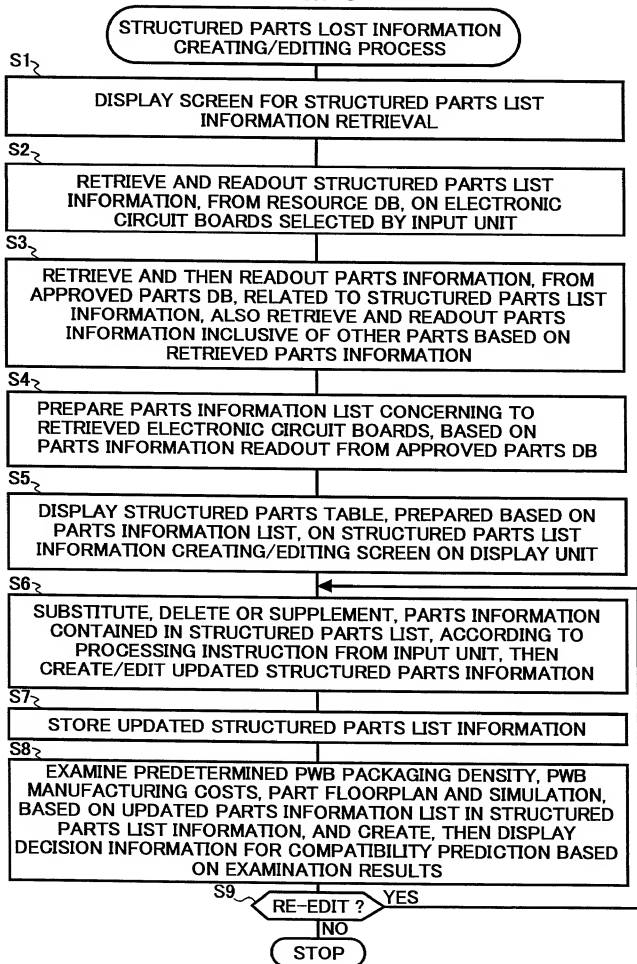


FIG. 9A

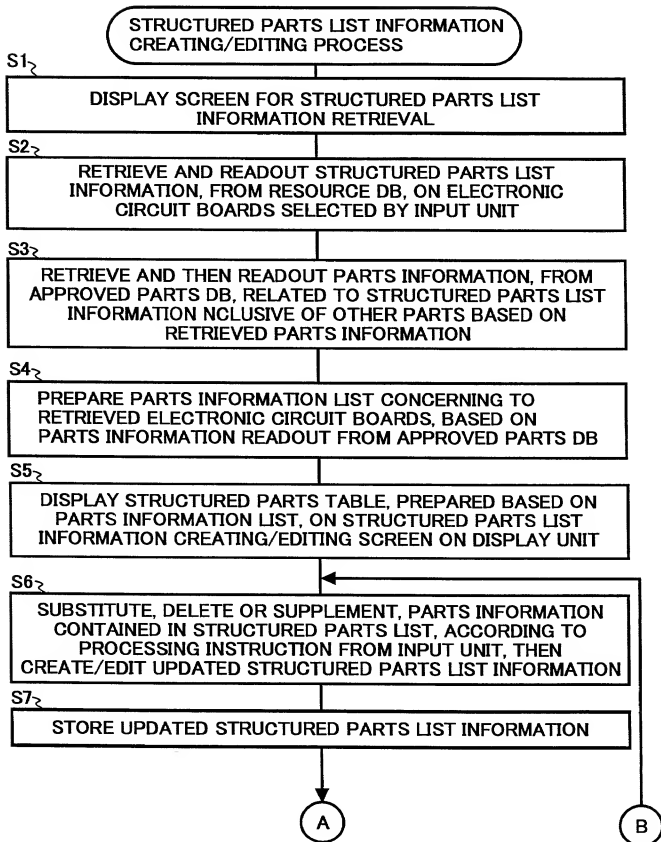


FIG. 9B

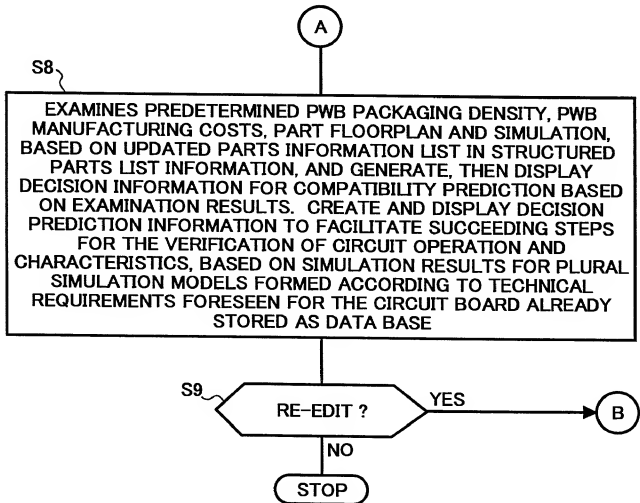


FIG. 10

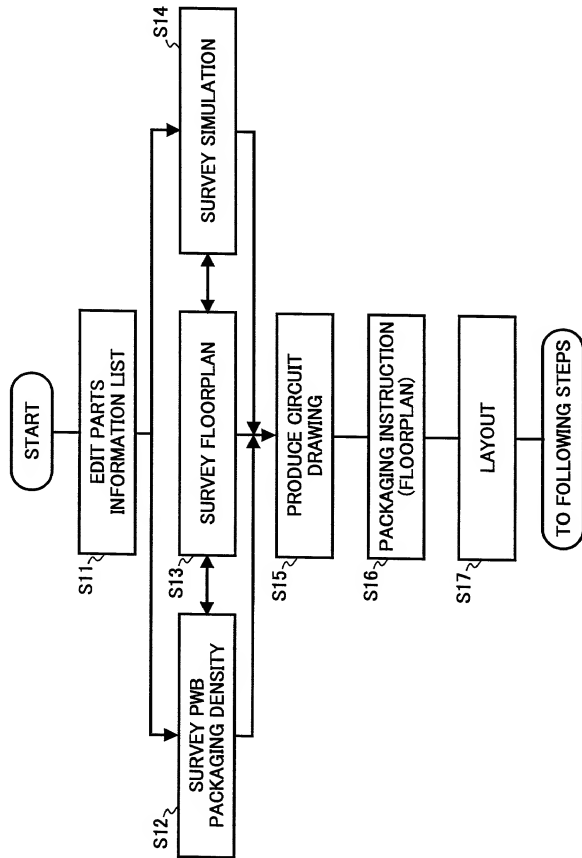


FIG. 11

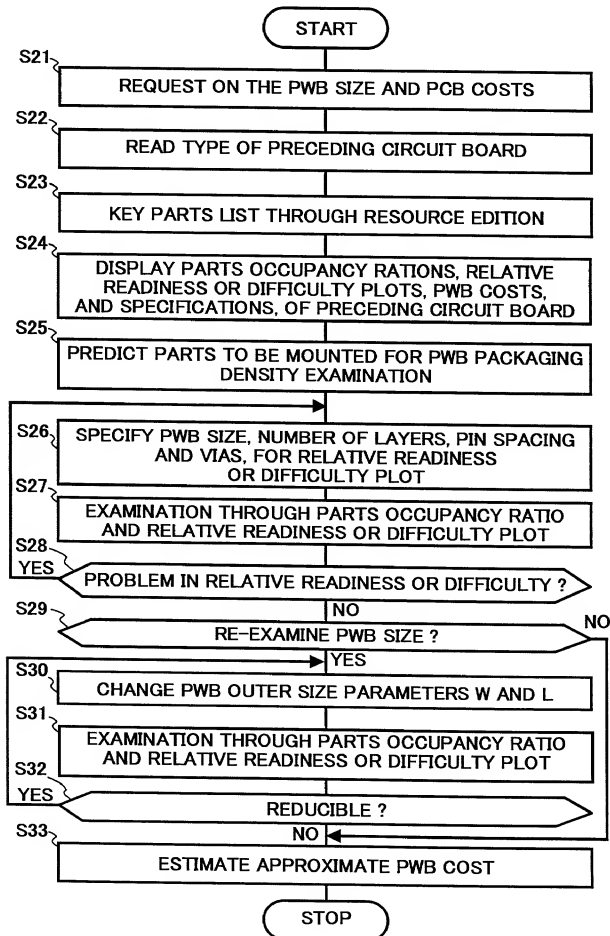


FIG. 12

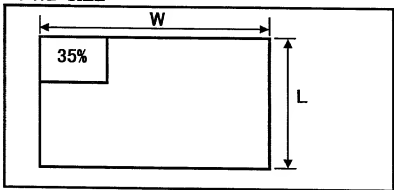
PACKAGING DENSITY EXAMINATION		X	
21	PWB SIZE 		
22	SWITCH PARTS OCCUPANCY RATIO <input type="radio"/> SINGLE-SIDED MOUNTING <input checked="" type="radio"/> DOUBLE-SIDED MOUNTING		
23	PWB PARAMETER W <input type="text" value="121"/> mm L <input type="text" value="90"/> mm PWB AREA 108.9 cm ² PIN SPACING <input type="text" value="3"/> ▼		
24	PREDICTION OBTAINED FROM KEY PARTS PIN NUMBER MULTIPLIED BY COEFFICIENTS NUMBER OF PINS <input type="text" value="1981"/> PARTS OCCUPANCY <input type="text" value="77.03"/> cm ² PIN DENSITY <input type="text" value="18.19"/> PIN/cm ²		
25	KEY PARTS NUMBER OF PARTS <input type="text" value="49"/> NUMBER OF PINS <input type="text" value="1087"/> PARTS OCCUPANCY <input type="text" value="60.65"/> cm ²		
	APPROXIMATE PWB COSTS		28
	COMMENTS ON PREDICTION COEFFICIENTS		29
	RESOURCE DISPLAY		30

FIG.13A

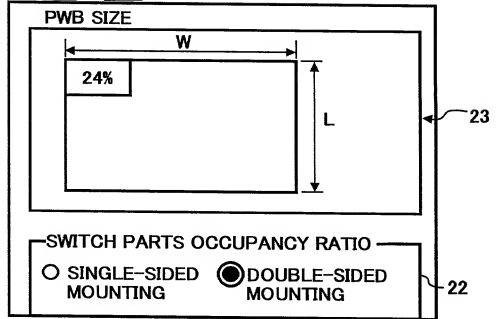


FIG.13B

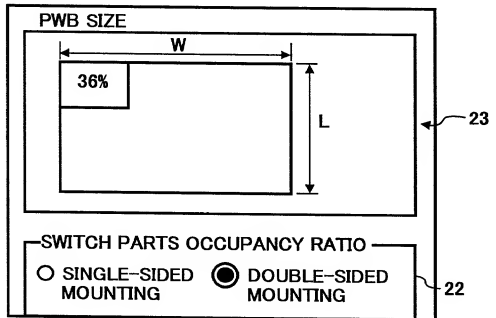


FIG.13C

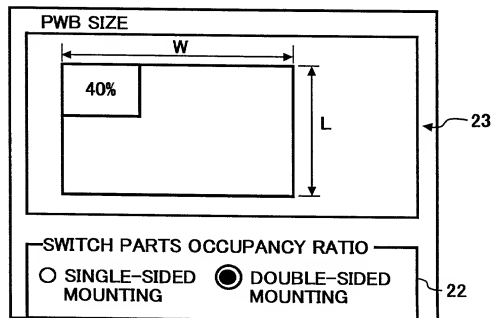


FIG. 14

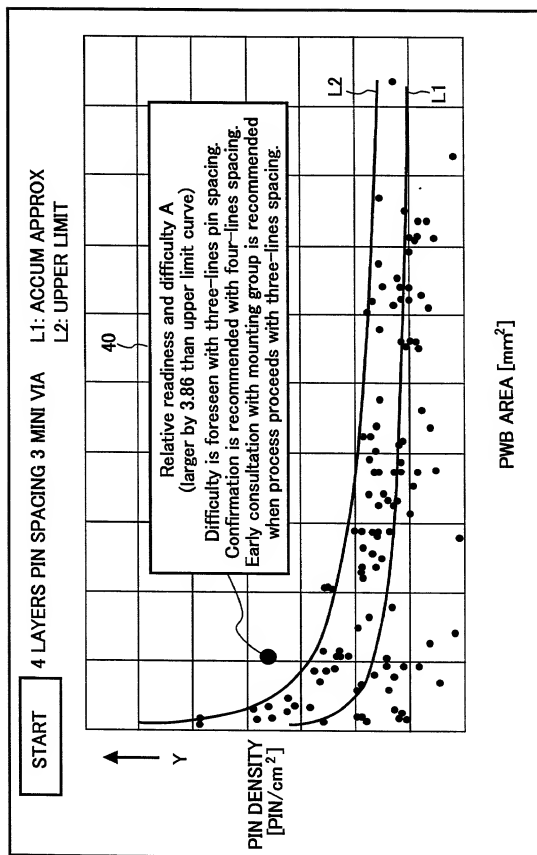


FIG. 15

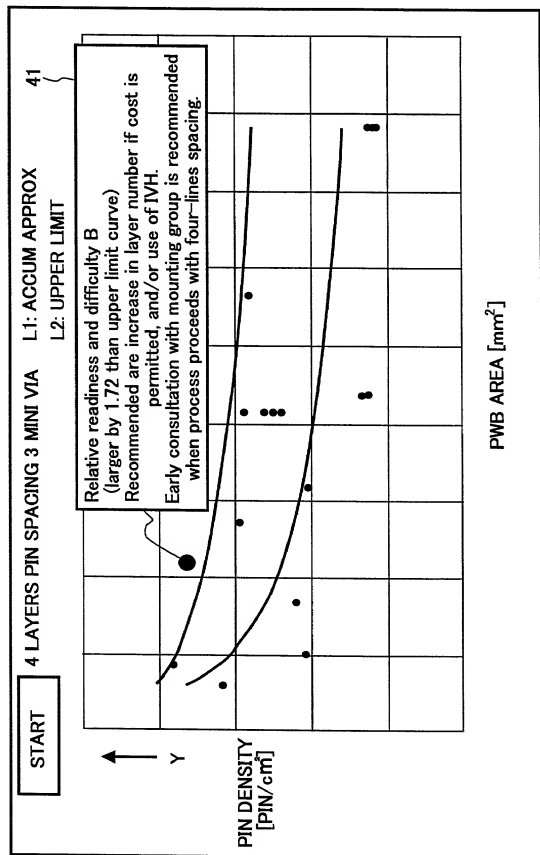


FIG. 16

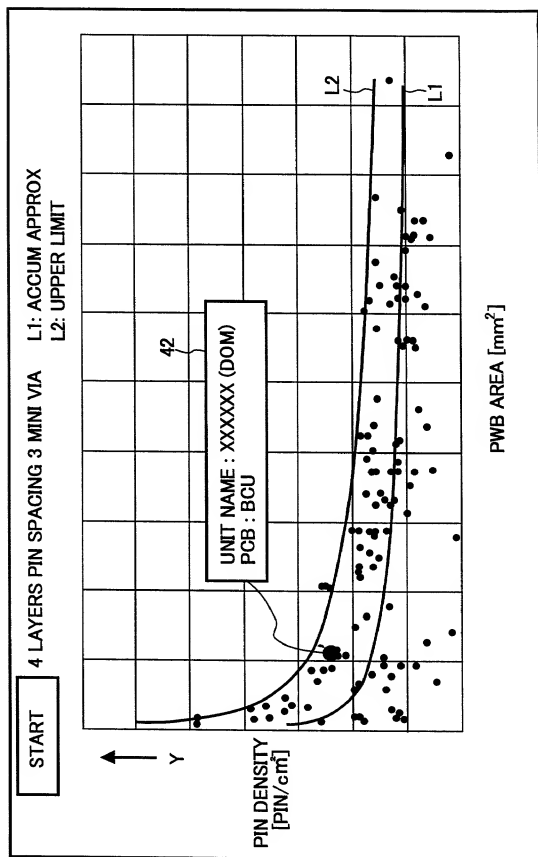


FIG. 17

889		<input type="checkbox"/>	
APPROXIMATE COSTS			
PWB SIZE	121 × 90		
PIN SPACING	3 LINES		
SHEET THICKNESS			
<input type="radio"/> 0.8	<input type="radio"/> 1.0	<input type="radio"/> 1.2	<input checked="" type="radio"/> 1.6
MATERIALS			
<input checked="" type="radio"/> FR-4	<input type="radio"/> CFM-3		
VIA			
<input type="radio"/> Middle	<input checked="" type="radio"/> Mini	<input type="radio"/> BVH	
NUMBER OF LAYERS			
<input type="radio"/> 2	<input checked="" type="radio"/> 4	<input type="radio"/> 6	
CUT-OUT SHEET NUMBER = 36			
APPROXIMATE COSTS = 889 YEN			

FIG. 18

PARTS PREDICTION COEFFICIENTS				
<div style="text-align: right;">X</div> <p>Number of pins and parts occupancy area are estimated based on key parts arrangement. Accordingly, further calculations based on these values may yield results different from those obtained experimental data.</p> <p>In the present calculation, therefore, prediction coefficients are used as shown below in the table, which are provided to estimate these values more precisely to realize actual mounting on the PWB by taking into account of predicted number of the parts expected to be mounted.</p>				
	RATIO OF PIN NUMBER TO TOTAL KEY PARTS PIN NUMBER	AREA PER PIN	PREDICTED PIN NUMBER	PREDICTED AREA (cm ²)
RESISTOR	1.7	0.8	639	5.11
CAPACITOR	5.2	3.7	209	7.73
OTHER	23.6	7.7	46	3.54

PUSH TO ALTER

ALTER

END

FIG. 19A

A screenshot of a software dialog box titled "INPUT RESOURCE PART NO." with a close button (X) in the top right corner. The dialog contains a label "PWB PART NUMBER" followed by a text input field containing the value "E0005678 |". At the bottom, there are two buttons: "OK" and "CANCEL". A reference numeral "43" points to the "OK" button.

FIG. 19B

A screenshot of a menu box containing three vertically stacked rectangular buttons. The buttons are labeled "APPROXIMATE PWB COSTS", "COMMENTS ON PREDICTION COEFFICIENTS", and "RESOURCE DISPLAY". A reference numeral "30" points to the "RESOURCE DISPLAY" button.

FIG. 19C

A screenshot of a menu box containing three vertically stacked rectangular buttons. The buttons are labeled "APPROXIMATE PWB COSTS", "COMMENTS ON PREDICTION COEFFICIENTS", and "RETURN". A reference numeral "44" points to the "RETURN" button.

FIG. 20

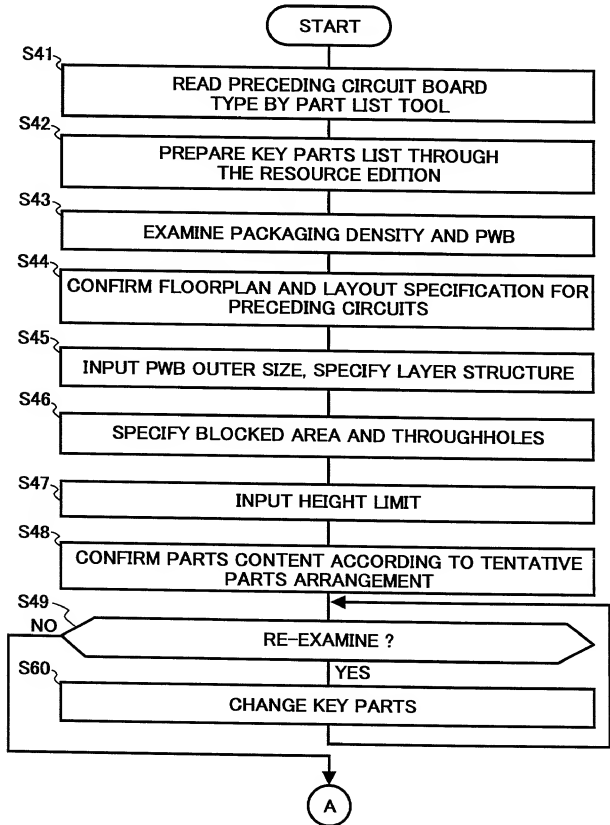


FIG. 21

